

APPLICATION
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TITLE: RECTANGULAR BIN WITH OCTAGONAL INNER
 WALLS

APPLICANT: ROBERT D. CHAMPION AND HAROLD L. BAKER

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CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The invention claims priority under 35 U.S.C. §119 to provisional application serial no. 60/450,042, filed February 26, 2003, the disclosure of which is incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

[0002] This invention relates to containers.

[0003] More particularly, the present invention relates to storage and transport bins.

BACKGROUND

[0004] In the art of storage and shipping bins, especially those used in retail markets, safety and durability are very important. Conventional bins used for transport and storage are formed of corrugated paper formed in an octagonal shape and carried on a rectangular pallet. These bins typically have an open top and are used to hold a variety of bulk items, such as watermelons and pumpkins in grocery stores, stuffed animals, balls, etc. in toy stores, and the like. While simple, inexpensive and effective at holding items, the octagonal shape solves some problems, but creates more. Specifically, the shape provides greater

structural rigidity than rectangular bins. However, the shape also leaves the corners of the rectangular pallets, upon which they sit, uncovered. These exposed corners can and have resulted in injuries and lawsuits. It would be highly advantageous, therefore, to remedy the foregoing and other deficiencies inherent in the prior art.

[0005] Accordingly, it is an object of the present invention to provide a new and improved bin.

[0006] Another object of the invention is to provide a bin having structural rigidity and having outer walls matching a supporting pallet.

[0007] And another object of the invention is to provide a rectangular bin having an octagonal inner wall.

[0008] Still another object of the present invention is to provide a unitary sheet folded into a double walled bin.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The foregoing and further and more specific objects and advantages of the instant invention will become readily apparent to those skilled in the art from the following detailed description of a preferred embodiment thereof taken in conjunction with the drawings, in which:

[0010] FIG. 1 is a perspective view illustrating a bin according to the present invention.

[0011] FIG. 2 is a top plan of an unfolded bin sheet;

[0012] FIG. 3 is a perspective view of a glued and collapsed bin;

[0013] FIG. 4 is a side view of the collapsed bin of FIG. 2;

[0014] FIG. 5 is a perspective view illustrating folding the bin sheet into a bin; and

[0015] FIG. 6 is a perspective view illustrating the final folds forming the bin.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0016] Turning now to the drawings in which like reference characters indicate corresponding elements throughout the several views, attention is first directed to FIG. 1 which illustrates a bin generally designated 10 supported upon and substantially covering a pallet 12. As can be seen, the footprint of bin 10 substantially matches the surface of pallet 12. Bin 10 includes outer walls 13 and bottom 14 defining a substantially rectangular volume and inner walls 15 define an octagonal volume within outer walls 13. It will be understood that while a rectangular bin is illustrated, outer walls 13 can also define other shapes such as a square.

[0017] Referring now to FIG. 2, a bin blank 16 is shown to illustrate the various scores and cuts used to create bin 10 from a single integral sheet of material. Blank 16 is

preferably formed of multiple walled corrugated paper well known in the art. Single, double, triple or more layers of corrugated paper can be employed as desired. Blank 16 is then processed to create the scores, perforated scores and cuts as shown, in any manner or method, but preferably by die cutting. Through cuts are designated A, standard scores are designated B, perforated scores are designated C. Blank 16 is divided into longitudinal rows 17, 18 and 19. Row 17 is separated from row 18 by scores B. Row 18 is separated from row 19 by a combination of scores B and cuts A.

[0018] With additional reference to FIG. 2, bottom flaps 21, 22, 23 and 24 are formed in row 17 of blank separated by through cuts A. Flaps 21 and 23 each include a pair of slots 26 formed in the score separation from row 18 and are shaped to include tabs 27. Flaps 22 and 24 include a pair of slots 28 formed in the score separation from row 18 and include slots 29 formed therein for receiving tabs 27. Flaps 22 and 24 each additionally include a pair of slots 30 formed diagonally therein, for purposes which will be described presently and slots 31. Tabs 27 are received within slots 29 to form flaps 21, 22, 23, and 24 into bottom 14. It should be understood that other types of bottom configurations can be employed.

[0019] Still referring to FIG. 2, row 18 is separated into panels 35, 36, 37 and 38 by standard scores B, and a

glue tab 40 extending from panel 38 for attachment to panel 35 to create a collapsed bin 10 as illustrated in FIG. 3. Row 19 is separated into two 3-wall panels 43, and 44, and two end walls 45 and 46 by through cuts A. 3-wall panels 43, and 44, and end walls 45 and 46 each include a pair of tabs 47 along their cut edge which correspond to and are received within slots 26 and 28. End walls 45 and 46 include additional slots 50 formed in the separation from row 18. 3-wall panels 43 and 44 each include a central portion 52 and opposing end portions 54 and 55 separated from central portion 52 by perforated scores C. Each end portion is further divided by a perforated score C to form an angle wall 58 and an end flap 59. Angle walls 58 include a tab 61 extending from the cut edge and end flaps 59 include a tab 62 extending from the cut edge.

[0020] Due to processing constraints, 3-wall portion 44 is completed in the gluing process which creates collapsed bin 10. Thus, end portion 55 of 3-wall portion 44 is created by providing end flap 59 thereof with a glue tab 65. Glue tab 65 is adhered to angle wall 58 to create the correct 3-wall panel. While this is the preferred process, one skilled in the art will understand that 3-walled panel 44 can be formed without end portion 55. It will also be seen that additional scores 70 are formed in 3-wall panels

43 and 44. This is to facilitate proper folding into collapsed bin 10 for use on existing machinery.

[0021] Turning now to FIGS. 1, 5 and 6, bin 10 is created from collapsed bin 10 by first folding bottom flaps 21, 22, 23 and 24 to form bottom 14 and outer walls 13. Referring to FIG. 5, 3-wall panels 43 and 44 are then folded over in the direction of the arrowed lines to create six of the sides of octagonal inner walls 15. Tabs 47 of 3-wall panels 43 and 44 are received within slots 28 formed in bottom 14 to position and retain 3-wall panels 43 and 44 in position. Tabs 61 are received in slots 30 of bottom 14, and tabs 62 are received in slots 31 of bottom 14. With reference to FIG. 6, end walls 45 and 46 are folded over in the directed of the arrowed lines with tabs 47 being received within slots 26 formed in bottom 14 to position and retain end walls 45 and 46. Additionally, end walls 45 and 46 overlies end flap 59, further securing them. Tabs 70 of end flaps 59 are received within slots 50 to further retain end flaps 59. The interconnections provide a secure and rigid bin.

[0022] Various changes and modifications to the embodiments herein chosen for purposes of illustration will readily occur to those skilled in the art. To the extent that such modifications and variations do not depart from the spirit of the invention, they are intended to be included within the scope thereof.